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Owner/Applicant: TOYOTA JIDOSHA KABUSHIKI KAISHA et al.

**Comment on the Written Opinion of the International Search  
Authority mailed on January 31, 2005:**

We thank the Examiner for his thorough analysis of the case. The assessments regarding novelty appear correct.

We can, however, not agree to the Examiner's assessment that what distinguishes the invention from the prior art of EP 1 281 562 A2 (D1) is just a "procedural detail" constituting "an obvious alternative solution to the problem underlying the present invention (monitoring abnormality of sensors)", and thus "a non-substantial modification".

As the Examiner correctly noted, D1 calculates first and second difference values ( $\Delta V_{mg} = |VM - VG|$ ,  $\Delta V_{gb} = |VG - VB|$ ) between two pairs each of three detected values (VB, VG and VM), and compares the first and second difference values with first and second reference (threshold) values ( $V_{th1}$ ,  $V_{th2}$ ) respectively in order to determine which one of the detecting means (72, 75 or 76) is abnormal.

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It appears consequential to use three sensors to supervise three detecting means. There is nothing in D1 nor in the other prior art of record which suggests that a modification of the number of sensors in D1 might be feasible.

Nevertheless it is the objective problem of the invention to reduce the numbers of sensors at no sacrifice to monitoring abnormality of detecting means.

To solve this problem the invention calculates two difference values ( $A = |VBE - VB|$ ,  $B = |VBE - VH|$ ) with respect to one reference value (estimated battery voltage value VBE), and compares each of the difference values with a predetermined threshold value. Thus the present invention uses two voltage values (VB, VH) detected by detecting means, and one estimated battery voltage value (VBE) which is calculated, not detected by detecting means.

In contrast thereto, in D1 all voltage values which are used for determining abnormality are detected by associated sensors.

This difference is by no means non-substantial, but reduces the expenditure for sensors by one third.

There is no suggestion at all in all of the prior art that one of the detected voltage values in D1 could be successfully replaced by an estimated voltage value.

Therefore, the invention is not only novel, but also based on an inventive step in the sense of Art. 33(3) PCT.



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